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Use and Admissibility of 'High Tech' Evidence

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Over the past two decades, computers have fundamentally changed the way many lawsuits are tried. Documents are published to the jury on video monitors using CD-ROM images. Witness testimony is presented by videotape, often edited (or "scripted") to insert images of exhibits shown to the witness. Computer-generated graphics, such as charts and graphs, are used in lieu of "court boards" during opening statements and closing argument.

Computer-generated animations are used during expert testimony to simulate the functioning of complex machinery, to reconstruct motor vehicle accidents, and for many other purposes. Courts grappling with the use and admissibility of computer-generated evidence have struggled, with mixed success, to balance two competing considerations. On the one hand, such evidentiary materials can be very effective in explaining complex concepts to a lay jury or the court, and can thereby assist juries in understanding key issues in dispute – and hence in rendering a fair decision. At the same time, however, such demonstrative materials are subject to abuse, particularly where one party has significantly greater economic power and thus a greater ability to withstand the considerable costs that may be incurred in developing "high tech" demonstrative materials. Courts have frequently voiced concern that jurors exposed to videotaped or computer-generated reenactments will be unduly influenced by the seemingly "live" version of a past event. E.g., *Sommervold v. Grevlos*, 518 N.W.2d 733, 737 (S.D. 1994) (The impact of video reenactment is substantial. When people see something on television, they think it is real even when it is not.)

There is a broad spectrum of materials that, for lack of a better term, can be characterized as high-tech evidence. The rules governing the admissibility of these materials vary considerably depending on where, on the spectrum, a particular piece of evidence falls. Toward one end of the spectrum, where the following discussion begins, there is relatively little evidentiary controversy; at the opposite end, there are significant evidentiary hurdles that must be overcome before computer-generated evidence can be admitted.

CD-ROM Images of Documents: It seems well-settled in California and most jurisdictions that documents, once admitted into evidence, may be published to a jury in the form of CD-ROM images projected onto a computer monitor or projection screen, just as a document might be displayed using a transparency and overhead projector. Moreover, CD-ROM images of documents, like photocopies, are typically admissible in lieu of originals, at least for business records. The California Evidence Code provides that, for business records, "[a] nonerasable optical image reproduction is as admissible as the writing itself, so long as additions, deletions, or changes to the original document are not permitted by the technology." Cal. Evid. Code § 1550.

There also should be no controversy over computer software which allows an attorney to highlight or zoom in on portions of the document during a witness examination or in argument. That, after all, is the functional equivalent of marking on a large blow-up of a document, or on a transparency used with an overhead projector – both long-accepted practices.

Videotaped Depositions: Both the California Code of Civil Procedure and the Federal Rules of Civil Procedure expressly allow the videotaping of depositions. Cal. Code Civ. P. § 2025(l); Fed. R. Civ. P. 30(b)(2).

Resolving a conflict in the Courts of Appeal, the California Supreme Court recently ruled that, during a

videotaped deposition, the deponent may be compelled not only to give verbal answers but also to provide a "non-verbal response" such as reenacting an injury. *Emerson Electric Co. v. Superior Court*, 16 Cal.4th 1101, (1997) (plaintiff could be required, during videotaped deposition, to demonstrate how his injury occurred). Federal decisions are in accord. *Roberts v. Homelight Div. of Textron, Inc.*, 109 F.R.D. 664 (N.D. Ind. 1986); *Carson v. Burlington Northern Inc.*, 52 F.R.D. 492 (D. Neb. 1971).

While there appear to be no published decisions on point, it seems clear that parties playing a videotape of a party's deposition testimony at trial should be permitted to edit in images of exhibits shown to the witness during examination, provided that the exhibits have first been admitted into evidence. This, after all, is the functional equivalent of publishing the exhibit to the jury by more traditional means during the witness's live testimony, or during the reading of his or her deposition transcript.

"Live Action" Video And Motion Control: Parties sometimes seek to introduce into evidence videotapes of an event, scene, or other subject. Most common are "live action" videotapes, but parties also make videotape productions from a series of still photographs, just as a television documentary will use historical photographs to depict past events. In these productions, the video camera zooms in on key portions of the photographs, a process referred to as "motion control."

The admissibility of such materials depends principally on what the videotape purports to depict. If the videotape, for instance, merely shows an accident scene after the fact, its admissibility is analyzed by the same rule applicable to still photographs, since the video is, after all, nothing more than a "moving picture." Such a videotape is admissible so long as it "accurately depicts what it purports to show." *People v. Mayfield*, 14 Cal.4th 668, 747 (1997). The same appears to be true if the videotape merely depicts background facts relevant to a dispute, such as the process by which circuit breakers are fabricated in a dispute over injuries allegedly caused by a defective circuit breaker.

On the other hand, significant evidentiary issues can arise if the videotape [i] is intended to recreate a historical event that is in dispute, such as an automobile accident, or [ii] is used to show the results of an experiment as to a disputed fact, such as whether an automobile will roll over when subjected to certain conditions. For such videotapes, it is not enough for admissibility to demonstrate merely that the video accurately depicts the events in it. Instead, it must also be shown that the events themselves bear a substantial similarity to the actual event or disputed fact. See *DiRosario v. Havens*, 196 Cal.App. 3d 1224, 1231 (2nd Dist. 1987).

The "substantially similar" standard results in a situation-specific inquiry that leaves much discretion to the trial judge, "almost total discretion," according to one court. *Culpepper v. Volkswagen of America, Inc.*, 33 Cal.App.3d 510, 522 (4th Dist. 1973). In *Culpepper*, the court admitted a film of an experiment which showed a car rolling over when the steering wheel was turned sharply at a specified speed. Because the main issue in the case was the car's handling when the front wheels were turned sharply, only the surface of the road – dry, flat, and smooth – needed to be the same in the test and the actual accident. *Id.*

By contrast, the Court of Appeal in *Ehrhardt v. Brunswick, Inc.*, 186 Cal.App. 3d 734, 741 (4th Dist. 1986), affirmed the exclusion of a live-action videotape. In *Ehrhardt*, the defendant, to illustrate an alternative theory of how an accident occurred, made a video showing how a water skier could be pulled by a tow rope into a boat's propeller. The Court of Appeal affirmed exclusion of the tape because "the tape assumes that the tow rope became wrapped around the propeller before the accident and that [plaintiff] either was holding onto or became entangled in the rope. The record provides no support for either of these assumptions." 186 Cal.App.3d at 740.

Computer Animations and Simulations: For the most part, the same rules developed for live action video govern the admissibility of computer-generated animations and simulations. Indeed, computer animations are a relatively recent development that is quickly replacing live video for such things as accident reconstructions. Whereas 20 years ago a party might attempt to recreate a motor vehicle accident by videotaping a moving vehicle, today litigants are far more likely to model the accident on a computer.

There are a variety of purposes for which computer animations are developed, and the standards governing the admissibility of such animations vary considerably according to their purpose. Two related distinctions

appear to govern the admissibility of such materials.

First, some animations merely illustrate a scientific principle or provide background information relevant to a dispute, rather than attempting to recreate an event in dispute. For instance, in a lawsuit involving injuries from electric shock, a party might offer an animation that shows generally how electrical circuits function, or how a circuit breaker interrupts a circuit. See, e.g., *In re Air Crash Disaster*, 86 F.3d 498, 539 (6th Cir. 1996) (admitting six-minute computer animation of the operation of a circuit breaker where the purpose was to know the circuit breaker's inner workings, and not to simulate what had happened to the circuit breaker in the accident). A proper foundation must, of course, be laid for such animations, but this requires only that the animation fairly and accurately depict the process being demonstrated. See, e.g., *New York v. McHugh*, 476 N.Y.S.2d 721, 722 (N.Y. Sup. Ct. 1984).

By contrast, animations can attempt to recreate actual events in dispute, e.g., to illustrate a theory of where a fire began inside the engine and how it spread so as to cause an airplane crash. See, e.g., *Datskow v. Teledyne Continental Motors Aircraft Products*, 826 F.Supp. 677, 685 (W.D.N.Y. 1993). Such animations are likely to encounter significantly greater scrutiny and, like live action video reconstructions, must bear a "substantial similarity" to the actual events in dispute. See *Hinkle v. City of Clarksburg*, 81 F.3d 416, 424 (4th Cir. 1996) (same "substantial similarity" requirement imposed upon live-action recreations should also be imposed on computer-animated recreations, because there was no "practical distinction...between a real-life recreation and one generated through computer animation; both can be a particularly powerful recreation of the events") (*dictum*); *Sommervold v. Grevlos*, 518 N.W.2d 733, 737 (S.D. 1994) (computer animation must be nearly identical to event in dispute).

A second, related distinction often arises with animations used in connection with expert testimony. Several courts have drawn a distinction between animations that merely "illustrate" the expert's opinion, and computer simulations that form the "basis" of the opinion. See D. Canter, et al., *Admissibility of Computer Generated Video Graphics in the Courtroom*, CEB's Civil Litigation Rptr., Vol. 13, No. 7 (Nov. 1991). This distinction is perhaps best shown by example. In a case involving an airplane crash, an expert might conclude based on a study of the crash scene that the crash was caused by pilot error rather than mechanical malfunction, and a computer animation might be offered to *illustrate* the expert's theory of how pilot error caused the accident. Generally, such computer animations need only be a fair and accurate depiction of the testimony. See, e.g., *People v. Hood*, 53 Cal.App.4th 965, 969 (4th Dist. 1997) (computer animation of fatal shooting is admissible to illustrate testimony; it is merely a "mechanized version of what a human animator does when he or she draws each frame of activity...then fans through the frames, making the characters drawn appear to be moving").

Narration On Videotapes and Animations: Parties offering videotapes and computer animations into evidence will occasionally include a voice-over narration describing the visual images being shown. Where the video or animation is being used to illustrate witness testimony, the audio portion almost certainly violates the hearsay rule and will generally be excluded. See, e.g., *People v. Rodrigues*, 8 Cal.4th 1060, 1113 (1994) (allowing live action videotape to be played, but without sound). A different result would seemingly apply to videotapes played during opening statement or, more commonly, closing argument – a practice that seems to be gaining popularity. Such tapes arguably can include an audio portion, since the audio is substituting for counsel's address to the jury, rather than the testimony of a witness.

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